IN THE CLAIMS

The status of the claims as presently amended is as follows:

1. (*Currently Amended*) A substrate for a perpendicular magnetic recording medium, comprising:

a nonmagnetic base composed of an aluminum alloy; and

a soft magnetic underlayer,

wherein the soft magnetic underlayer consists of a Ni-P alloy containing phosphorus in a range of 0.5 wt% to ~~less than 6~~ 4 wt%.

2. (*Original*) The substrate according to claim 1, wherein the soft magnetic underlayer has a thickness of 3 μm or greater.

3. (*Currently Amended*) ~~The~~ A substrate ~~according to claim 1, further including~~ for a perpendicular magnetic recording medium, the substrate comprising:

a nonmagnetic base composed of an aluminum alloy;

a soft magnetic underlayer; and

a nonmagnetic underlayer composed of an Ni-P alloy formed between the base and the soft magnetic underlayer,

wherein the soft magnetic underlayer consists of a Ni-P alloy containing phosphorus in a range of 0.5 wt% to 6 wt%.

4. (*Original*) The substrate according to claim 3, wherein the nonmagnetic underlayer has a thickness ranging 0.5 μm to 7 μm, the soft magnetic underlayer has a thickness of 0.3 μm or greater, and a sum of the thickness of the nonmagnetic underlayer and the thickness of the soft magnetic underlayer is 3 μm or greater.

5. (*Original*) The substrate according to claim 3, wherein the nonmagnetic underlayer is composed of Ni-P alloy containing about 11 wt% of phosphorus.

6. (*Original*) The substrate according to claim 2, wherein the surface of the soft magnetic underlayer has a surface roughness Ra of 0.5 nm or less and a micro waviness Wa of 0.5 nm or less.

7. (*Original*) The substrate according to claim 4, wherein the surface of the soft magnetic underlayer has a surface roughness Ra of 0.5 nm or less and a micro waviness Wa of 0.5 nm or less.

8. (*Currently Amended*) A perpendicular magnetic recording medium comprising:

a substrate; and

a nonmagnetic seed layer, a magnetic recording layer, and a protective layer sequentially formed on the substrate,

wherein the substrate comprises a nonmagnetic base composed of an aluminum alloy; and a soft magnetic underlayer,

wherein the soft magnetic underlayer consists of a Ni-P alloy containing phosphorus in a range of 0.5 wt% to ~~less than 6~~ 4 wt%, and

wherein the soft magnetic underlayer functions as a soft magnetic backing layer.

9. (*Original*) The perpendicular magnetic recording medium according to claim 8, wherein the soft magnetic underlayer has a thickness of 3 μm or greater.

10. (*Currently Amended*) ~~The~~ A perpendicular magnetic recording medium ~~according to claim 8, wherein the substrate further includes~~ comprising:

a substrate; and

a nonmagnetic seed layer, a magnetic recording layer, and a protective layer sequentially formed on the substrate,

wherein the substrate comprises a nonmagnetic base composed of an aluminum alloy, a soft magnetic underlayer, and a nonmagnetic underlayer composed of an Ni-P alloy formed between the base and the soft magnetic underlayer,

wherein the soft magnetic underlayer consists of a Ni-P alloy containing phosphorus in a range of 0.5 wt% to 6 wt%, and

wherein the soft magnetic underlayer functions as a soft magnetic backing layer.

11. (*Original*) The perpendicular magnetic recording medium according to claim 10, wherein the nonmagnetic underlayer has a thickness ranging 0.5 μm to 7 μm, the soft magnetic underlayer has a thickness of 0.3 μm or greater, and a sum of the thickness of the nonmagnetic underlayer and the thickness of the soft magnetic underlayer is 3 μm or greater.

12. (*Original*) The perpendicular magnetic recording medium according to claim 10, wherein the nonmagnetic underlayer is composed of Ni-P alloy containing about 11 wt% of phosphorus.

13. (*Original*) The perpendicular magnetic recording medium according to claim 9, wherein the surface of the soft magnetic underlayer has a surface roughness Ra of 0.5 nm or less and a micro waviness Wa of 0.5 nm or less.

14. (*Original*) The perpendicular magnetic recording medium according to claim 11, wherein the surface of the soft magnetic underlayer has a surface roughness Ra of 0.5 nm or less and a micro waviness Wa of 0.5 nm or less.

15. (*Original*) The perpendicular magnetic recording medium according to claim 8, further including a soft magnetic supplement layer between the soft magnetic underlayer of the substrate and the nonmagnetic seed layer, wherein the soft magnetic supplement layer has a film thickness of 50 nm or less, and a product of the film thickness and a saturation magnetic flux density is 150 G μm or larger.

16. (*Withdrawn - Currently Amended*) A method of manufacturing ~~the~~ a substrate for a perpendicular magnetic recording medium, the method comprising the steps of:

providing a nonmagnetic base composed of an aluminum alloy; and

electroless plating a soft magnetic underlayer consisting of a Ni-P alloy containing phosphorus in a range of 0.5 wt% to ~~less than 6~~ 4 wt% on the nonmagnetic base.

17. (*Withdrawn*) The method according to claim 16, wherein the soft magnetic underlayer has a thickness of 3 μm or greater.

18. (*Withdrawn - Currently Amended*) ~~The~~ A method ~~according to claim 16, further including the step~~ of manufacturing a substrate for a perpendicular magnetic recording medium, the method comprising the steps of:

providing a nonmagnetic base composed of an aluminum alloy;

electroless plating a nonmagnetic underlayer composed of an Ni-P alloy on the nonmagnetic base ~~before~~; and

electroless plating ~~the~~ a soft magnetic underlayer consisting of a Ni-P alloy containing phosphorus in a range of 0.5 wt% to ~~less than 6~~ 4 wt% on the nonmagnetic underlayer.

19. (*Withdrawn*) The method according to claim 18, wherein the nonmagnetic underlayer has a thickness ranging 0.5 μm to 7 μm, the soft magnetic underlayer has a thickness of 0.3 μm or greater, and a sum of the thickness of the nonmagnetic underlayer and the thickness of the soft magnetic underlayer is 3 μm or greater.

20. (*Withdrawn*) The method according to claim 16, further comprising the step of heating the substrate to a temperature of 300° C or less for 30 minutes or longer after forming the soft magnetic underlayer.

21. (*Withdrawn*) The method according to claim 18, further comprising the step of heating the substrate to a temperature of 300° C or less for 30 minutes or longer after forming the soft magnetic underlayer.

22. (*Withdrawn*) The method according to claim 17, further including the step of polishing the surface of the soft magnetic underlayer using free abrasive grains to smooth the surface thereof.

23. (*Withdrawn*) The method according to claim 19, further including the step of polishing the surface of the soft magnetic underlayer using free abrasive grains to smooth the surface thereof.

24. (*Withdrawn*) The method according to claim 22, wherein the surface of the soft magnetic underlayer has a surface roughness Ra of 0.5 nm or less and a micro waviness Wa of 0.5 nm or less.

25. (*Withdrawn*) The method according to claim 23, wherein the surface of the soft magnetic underlayer has a surface roughness Ra of 0.5 nm or less and a micro waviness Wa of 0.5 nm or less.

26. (*Withdrawn - Currently Amended*) A method of manufacturing a perpendicular magnetic recording medium comprising the steps of:

forming a substrate by providing a nonmagnetic base composed of an aluminum alloy, and electroless plating a soft magnetic underlayer consisting of a Ni-P alloy containing phosphorus in a range of 0.5 wt% to ~~less than 6~~ 4 wt% ~~on~~ over the nonmagnetic base;

texturing a surface of the soft magnetic underlayer using free abrasive grains; and

sequentially forming a nonmagnetic seed layer, a magnetic recording layer, and a protective layer by sputtering.

27. (*Withdrawn*) The method according to claim 26, wherein the soft magnetic underlayer has a thickness of 3 μm or greater.

28. (*Withdrawn - Currently Amended*) ~~The~~ A method ~~according to claim 26, further including the step~~ of manufacturing a perpendicular magnetic recording medium comprising the steps of:

forming a substrate by providing a nonmagnetic base composed of an aluminum alloy, electroless plating a nonmagnetic underlayer composed of an Ni-P alloy on the nonmagnetic base ~~before~~, and electroless plating ~~the~~ a soft magnetic underlayer consisting of a Ni-P alloy containing phosphorus in a range of 0.5 wt% to 6 wt% on the nonmagnetic underlayer;

texturing a surface of the soft magnetic underlayer using free abrasive grains; and

sequentially forming a nonmagnetic seed layer, a magnetic recording layer, and a protective layer by sputtering.

29. (*Withdrawn*) The method according to claim 28, wherein the nonmagnetic underlayer has a thickness ranging 0.5 μm to 7 μm, the soft magnetic underlayer has a thickness of 0.3 μm or greater, and a sum of the thickness of the nonmagnetic underlayer and the thickness of the soft magnetic underlayer is 3 μm or greater.

30. (*Withdrawn*) The method according to claim 26, further comprising the step of heating the substrate to a temperature of 300° C or less for 30 minutes or longer after forming the soft magnetic underlayer.

31. (*Withdrawn*) The method according to claim 28, further comprising the step of heating the substrate to a temperature of 300° C or less for 30 minutes or longer after forming the soft magnetic underlayer.

32. (*Withdrawn*) The method according to claim 28, further including the step of forming a soft magnetic supplement layer on the soft magnetic underlayer before forming the nonmagnetic seed layer, wherein the soft magnetic supplement layer has a film thickness of 50 nm or less, and a product of the film thickness and a saturation magnetic flux density is 150 G μm or larger.

33. (*Withdrawn*) The method according to claim 27, wherein the surface of the soft magnetic underlayer has a surface roughness Ra of 0.5 nm or less and a micro waviness Wa of 0.5 nm or less.

34. (*Withdrawn*) The method according to claim 29, wherein the surface of the soft magnetic underlayer has a surface roughness Ra of 0.5 nm or less and a micro waviness Wa of 0.5 nm or less.